

**AMENDMENTS TO THE CLAIMS:**

Please cancel Claims 1-15 and 274.

The following listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

Claims 1-274 (Canceled)

Claim 275 (Presently Amended) A method of producing a library comprised of chimerized but defined polynucleotide sequences each of which is comprised of a defined number of polynucleotide segments that are assembled in an ordered fashion, the method comprising:

a) generating a plurality of defined polynucleotide segments of substrate nucleic acid sequences

that encode full-length enzymes,

and wherein the borders defining the polynucleotide segments are selected from the aligned substrate nucleic acid sequences; and

b) reassembling said defined polynucleotide segments in order

thereby producing the library of chimerized but defined polynucleotide sequences,

such that said segments are reassembled in an ordered fashion

for each chimerized but defined polynucleotide sequences encoding full-length

enzymes.